

ORIGINAL



0000107814

RECEIVED

**SALT RIVER PROJECT**

P. O. Box 52025  
Phoenix, AZ 85072-2025  
(602) 236-5262  
Fax (602) 236-3458  
kjibarr@srpnet.com

**KELLY J. BARR, ESQ.**

Manager, Regulatory Affairs & Contracts

2010 JAN 29 P 2:02

AZ CORP COMMISSION  
DOCKET CONTROL

January 29, 2010

Mr. Steve Olea  
Director, Utilities Division  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, AZ 85007

Re: Ten-Year Plan – 2010 Biennial Electric Transmission Assessment for 2010 through 2019  
Docket No. E-00000D-09-0020

Dear Mr. Olea:

Enclosed are an original and thirteen (13) copies of The Salt River Project's 2010-2019 Ten-Year Plan filed pursuant to A.R.S. Section §40-360-02. SRP is currently undergoing budget considerations for its Six Year Financial Plan which may result in changes to in-service dates of various transmission projects. SRP will advise you of any changes resulting from this process that would require an amendment to the Ten Year Plan.

Please contact Mr. Robert Kondziolka, Manager, Transmission Planning Department at (602) 236-0971 if you have any questions concerning this plan.

Sincerely,

Kelly J. Barr

KJB/jkb

Enclosures (14)

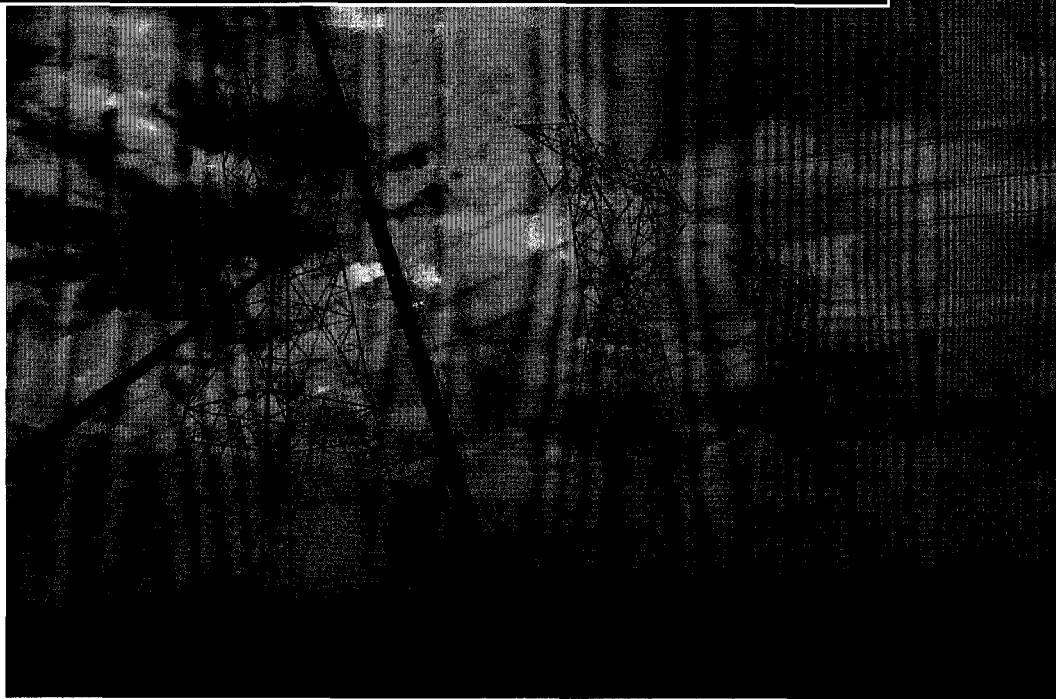
Arizona Corporation Commission  
**DOCKETED**

JAN 29 2010



2010

# Salt River Project Ten Year Plan Projects 2010-2019



Prepared for the Arizona Corporation Commission

January 2010

Docket No. E-00000D-09-0020

## Contents

Introduction.....	3
Regional Planning Forums .....	3
Renewable Transmission Projects .....	4
500kV Transmission.....	5
230kV Transmission.....	10
Potential Future Projects .....	12
Eastern Mining Area (EMA) Transmission .....	13
Project Maps.....	14
SRP's 500kV System .....	15
SRP's 230kV System Overview .....	16
SRP's 230kV West System.....	17
SRP's 230kV East System.....	18
SRP's 115kV System (Eastern Mining Area) .....	19
Renewable Transmission Projects .....	20
Project Descriptions .....	21
Morgan – Pinnacle Peak 500kV line (2010) .....	22
Pinal West – Pinal Central – Abel – Browning 500 & 230kV line (2011-2014).....	23
Palo Verde – Delany – Sun Valley 500kV line (2012-2014) .....	25
SunZia Southwest Transmission 500kV Project (2013-2014) .....	26
Pinal Central – Tortolita 500kV line (2014).....	27
Palo Verde – North Gila #2 500kV line (2014).....	28
Desert Basin – Pinal Central 230kV (2014).....	29
RS26 Project (2014).....	30
Sun Valley – Morgan 500kV line (2016).....	31
Abel – RS24 – Moody (RS-17) 230kV (2017-2018).....	32
Pinal Central – Abel – RS20 500kV line (2020).....	33
Hassayampa – Pinal West 500kV #2 (TBD).....	34
RS20 – Silver King – Coronado 500kV line (TBD).....	35
Palo Verde – Saguaro 500kV line (TBD) .....	36
Moody (RS17) 230kV Loop-in (TBD).....	37
Dinosaur - RS21 230kV line (TBD).....	38
Rogers - Browning 230kV line (TBD).....	39
Silver King – Browning 230kV line (TBD).....	40

---

Superior 230kV Loop-in (TBD) .....	41
Thunderstone – Santan 230kV line #2 (TBD).....	42
Pinnacle Peak – Brandow 230kV (TBD) .....	43
Rogers – Corbell 230kV line (TBD) .....	44
Silver King – Knoll – New Hayden 230kV (TBD) .....	45
New Hayden 115kV Station Loop-in (TBD) .....	46
APPENDIX	

## **Introduction**

This report updates and replaces the ten-year transmission plan of the Salt River Project Agricultural Improvement and Power District (SRP), submitted January 2009 pursuant to A.R.S. Section 40-360.02. The following general review is intended to complement and clarify the individual tabular pages included herein.

Any future facilities which might have appeared in previous ten-year plans, but which are not shown in this plan, are either completed or are no longer scheduled in the period covered. Due to recent economic conditions and the decline in projected customer growth in SRP's service territory, many of SRP's transmission projects have been delayed. When customer growth increases, SRP will reassess the need to revise its projects' in-service dates, as appropriate.

## **Regional Planning Forums**

SRP continues to be involved in numerous regional planning organizations, providing technical support and leadership. SRP's primary goal in its involvement in these regional planning entities is to ensure that a dependable and economical transmission system is connected to available energy sources that provide reliable power at reasonable prices to our customers now and in the future. Participation in the regional planning organizations also allows SRP to better assess its renewable generation options and ensures SRP's plans are coordinated with the plans of the other transmission providers.

The regional planning organizations operate in public forums, perform study work cooperatively, and develop plans in a collaborative fashion while disseminating study results to a broad spectrum of interested and affected parties. The integration of non-dispatchable generation, location of renewable resources, and generation dispatch dynamics continue to be the most challenging issues facing SRP, the state of Arizona, and the southwest with respect to meeting electric system reliability. The regional planning organizations are addressing these challenges and SRP relies on the results generated through these organizations to develop and submit its ten-year plan.

SRP participates in a variety of regional planning organizations including the Western Electricity Coordinating Council (WECC), specifically the Planning Coordination Committee (PCC) and the Transmission Expansion Planning Policy Committee (TEPPC). SRP also participates in the

transmission planning activities of WestConnect. WestConnect is comprised of 13 utility companies with transmission assets in 8 different states in the western United States that collaboratively assess stakeholder needs and develop cost-effective transmission and wholesale market enhancements. WestConnect is committed to coordinating its work with other regional industry efforts to achieve as much consistency as possible in the Western Interconnection. The WestConnect Planning Committee completed and approved its first annual Ten Year Transmission Plan in January 2008. SRP's transmission plans will be included as part of the February 2010 WestConnect Ten Year Transmission Plan.

The Southwest Area Transmission Planning Group (SWAT), with its technical study subcommittees, work groups and task forces, addresses future needs on a subregional (desert southwest) basis. SRP is engaged in all SWAT activities and is specifically relying on the following SWAT entities to meet obligations for the ACC and Ten Year Plan filing: Central Arizona Transmission System – High Voltage (CATS-HV), CATS – Extra High Voltage (EHV), Colorado River Transmission System (CRT), Southern Arizona Transmission System (SATS), Short Circuit Work Group, Renewable Energy Transmission Task Force, and Common Corridor Task Force. SWAT disseminates all of its work publically and coordinates its studies and data with other subregional planning groups and WestConnect.

## **Renewable Transmission Projects**

As part of the 5<sup>th</sup> Biennial Transmission Assessment, the Arizona Corporation Commission (“ACC” or “Commission”) adopted Decision No. 70635 which required “utilities and other stakeholders to hold a workshop to develop ways in which new transmission projects can be identified, approved for construction, and financed in a manner that will support the growth of renewables in Arizona.” The decision further specified that each utility “identify the top three potential renewable transmission projects in its service territory”.

On October 30, 2009 SRP filed its report with the ACC, identifying its top three renewable transmission projects. A copy of the full report may be found under Docket No. E-00000D-07-0376. SRP's selected projects are:

- Pinal West – Pinal Central 500kV line
- Pinal Central – Tortolita 500kV line
- Palo Verde – Delany 500kV line

In addition, while not the top three projects, the following projects were also considered to assist in the development of renewable resources:

- Palo Verde - Blythe 500kV line
- Coronado to the Valley 500kV line
- SunZia 500kV line

The renewable transmission projects identified by SRP are shown in Figure 6.

It is expected that the Commission will continue its emphasis on regional renewable planning. SRP will continue to be engaged in planning for both renewable and traditional resources and building transmission to bring the best mix of resources to our customers.

SRP actively participates in the Renewable Transmission Task Force to plan transmission needs to access the most viable renewable resources in Arizona.

### **500kV Transmission**

The SRP 500kV transmission system is shown in Figure 1 - SRP 500kV system. This system provides major support to SRP's local transmission network and generally delivers bulk power from remote generation to the Valley.

#### ***Hassayampa - Pinal West***

In May 2004, SRP, acting as project manager for SRP, Arizona Public Service<sup>1</sup>, Tucson Electric Power Company, Southwest Transmission Cooperative, Electric District 2, Electric District 3, and Electric District 4 of Pinal County, received a CEC (Case No. 124) for two parallel single circuit 500kV transmission lines from the Palo Verde hub (Hassayampa Switchyard) to a new Pinal West Substation in the Maricopa/Stanfield area. Determination of the centerline within the approved corridor for both of the lines was completed in 2007. The first line to Pinal West was energized in October of 2008. The second line is currently beyond the ten-year planning timeframe; the timing of the second line will be dependent on load growth, the need to access new resources and location of future generation. The CEC for this project expires on May 24, 2024.

---

<sup>1</sup> Arizona Public Service withdrew from participation in the project on September 15, 2005.

***Pinal West – Pinal Central – Abel – Browning***

In August 2005, SRP received a CEC for this joint participation project (Case No. 126). The ACC approved an amendment to the CEC in November 2005. Project participants include SRP, Tucson Electric Power Company, Southwest Transmission Cooperative, Electric District 2, Electric District 3, and Electric District 4 of Pinal County. This 500kV project begins at the Pinal West Substation and ends at the existing Browning Substation with intermediate interconnections at the existing Santa Rosa, the proposed Pinal Central (formerly known as Pinal South), and the proposed Abel (formerly known as Southeast Valley) Substation.

SRP is in the process of designing and acquiring right-of-way for the individual segments that comprise this transmission line project and is constructing the project in segments. The 500kV circuit from the TransCanada Coolidge Generating Station (Randolph Switchyard) to Browning is expected to be in service by 2011. The Randolph Switchyard is located between the Abel and Pinal Central Substations. The 500kV segment from Pinal West to Pinal Central to Randolph is expected to be in service by 2014. The completion dates for the individual substations and the various segments of the 500kV and 230kV circuits are discussed below.

***Pinal West – Pinal Central Segment***

The Pinal Central Substation was sited during the proceedings for the siting of the Pinal West to Browning 500kV line. The station was envisioned as a terminal for 500kV and 230kV transmission lines to bolster the EHV system in Pinal County and provide for delivery of power and energy to the Local Load Serving Entities (LLSE's). In the past few years, a number of entities have expressed interest in interconnecting to the 230kV and 500kV yards of this substation. The segment of the line from Pinal West to Pinal Central includes an intermediate interconnection at the Santa Rosa Substation. The segment from Pinal West to Santa Rosa is planned as a single circuit 500kV line and the segment from Santa Rosa to Pinal Central is planned as a double circuit 500/230kV line. The estimated in-service date for the Pinal Central Substation and the Pinal West to Pinal Central segment of the 500kV line is 2014. The Santa Rosa Substation will be developed as interest by local load serving entities is identified.



**Pinal Central – Browning Segment**

The segment from Pinal Central to the Browning Substation is planned as a double circuit 500/230kV line and the majority of this segment is expected to be in service in 2011 (the portion from Pinal Central to the 230kV Randolph Switchyard is expected to be placed in service in 2014). The Randolph to Browning segment is needed to provide for access to the recently certificated TransCanada Coolidge Generating Station (which will be connected to the SRP Randolph Switchyard). SRP has entered into a purchase power agreement to take the full output of the Coolidge plant. In addition to supporting the Coolidge output, the segment will allow access to other new generating resources that may be developed in the area and that may be available to SRP customers. The 230kV portion of the double circuit 500/230kV transmission line from Dinosaur Substation to the existing Browning Substation in the Southeast Valley was completed in 2007. The poles to accommodate the 500kV circuit were installed in 2007 as part of the 230kV construction. The Dinosaur-Browning 230kV segment is the parallel circuit of the Pinal West-Pinal Central-Abel-Browning 500kV circuit construction.

The Abel 500kV Substation, between the Pinal Central and Browning Substations, currently has a 2020 in-service date. The purpose of the Abel Substation is twofold: it will provide interconnections into the EHV system to bring generation resources into the SRP service territory and it will provide service to native SRP load. The proposed Abel Substation also includes a co-location of a proposed 230/69kV substation, referenced as RS22. The RS22 (230/69kV portion of Abel) Substation's expected in-service date is 2011.

***Morgan – Pinnacle Peak***

SRP is participating in the new 500kV line from the proposed Morgan (formerly TS9) Substation (planned to be constructed in the vicinity of the Raceway Substation) to a newly developed 500kV station at the Pinnacle Peak complex. SRP is not participating in the 230kV component of this project. APS is the project manager and received a CEC for this project in February 2007 (Case No. 131). This project reflects a 2010 in-service date.

## **230kV Transmission**

The SRP 230kV transmission system is shown in overview format on Figure 2 - SRP 230kV system overview and in detail on Figure 3 - Detail of SRP's 230kV West System and Figure 4 – Detail of SRP's 230kV East System. SRP's 230kV transmission network is used to transmit power from the bulk 500kV power stations on the periphery of the Phoenix metropolitan area to the various load centers in SRP's service territory. Additional transmission capacity will be required during the next ten years to meet load growth and for system reliability.

### ***Abel - RS24 – Moody (RS17)***

Study work based on load projections for the Southeast Valley indicates the need to provide additional transformer capacity to meet residential, commercial, and industrial loads. The RS24 Substation, to be located in the Queen Creek area and the double-circuit transmission lines connecting the substation to the system will provide the additional necessary capacity. This project will be staged with the first 230kV line in service by 2017. The second line is needed by 2018 and the RS24 Substation will be connected to the lines in 2018. SRP filed its CEC application in June 2009 (Case No. 148) and received approval from the ACC on December 23, 2009.

### ***Desert Basin Power Line Project (Desert Basin – Pinal Central)***

SRP was awarded a CEC (Case No. 132) for the construction of this 230kV line in June 2007 in Decision No. 69647 by the ACC. This project consists of two components. The first component is approximately six miles of new 230kV transmission line originating at the Desert Basin Generating Station in Casa Grande and terminating at the junction of Thornton Road and Cornman Road where it will intersect with the already certificated Pinal West – Abel/Browning 500/230kV Project (Case 126, Decision No. 68093). The second component of the project will utilize the 500/230kV Pinal West – Abel/Browning route, where SRP will attach the 230kV circuit to the 500kV structures for approximately 15 miles to the Pinal Central Substation south of Coolidge. SRP received approval for the addition of the 230kV component to the 500kV structures in Decision No. 69183 (Condition No. 23 in Case No. 126). This project is expected to be constructed in conjunction with the Pinal West to Pinal Central segment of the Project. The expected in-service date is 2014.

***Santa Rosa – Pinal Central – Abel – Dinosaur – Browning***

The ACC granted SRP authority to construct an optional 230kV circuit on the 500kV structures between the Santa Rosa and Abel Substations conditioned upon SRP providing appropriate study work to the Commission to support the need for the 230kV circuit. SRP, in two separate submittals to the ACC dated August 11, 2006 and June 27, 2008, provided the necessary study work to support the need for the entire 230kV circuit from Santa Rosa Substation to the Abel Substation. The ACC approved SRP's need for the 230kV circuit in Decision Numbers 69183 (December 8, 2006) and 70610 (November 19, 2008). The segment of the line from Abel to Dinosaur (formerly known as RS-19) to the Browning Substation was certificated for a double circuit 500/230kV transmission line and did not require additional study work. The Dinosaur-Browning section was energized in 2007. The Pinal Central – Abel – Dinosaur 230kV segment of the Southeast Valley Project will be utilized to connect the TransCanada Coolidge Generating Station to SRP's load service territory. The in-service date for this project is currently projected for 2011.

***RS26 (formerly Fountain Hills)***

SRP has identified the need for a 345/69kV, 230/69kV or 115/69kV receiving station in the Fountain Hills area. The projected load in the area will stress the underlying 69kV system to its limits by approximately 2014. Three methods of serving this station are being investigated. One method is to use the 115kV system and to construct a line from either Goldfield Substation or Stewart Mountain Substation into the Fountain Hills area. Another possibility is to construct a 230kV line from Goldfield Substation (along the Salt River) into the Fountain Hills area. The third alternative is to interconnect to the APS Cholla - Pinnacle Peak 345kV line that runs north of the Rio Verde area. The option and final line routing will be determined through a public and environmental process to support preparation of an application for a CEC. SRP must comply with the National Environmental Protection Act (NEPA) and will file for a CEC after a draft EIS (Environmental Impact Statement) is achieved in the federal permitting process.

***Moody (RS17)***

SRP has identified the need for the future RS17 230/69kV Receiving Station (adjacent the existing Moody 69kV station) in the Gilbert/Queen Creek area to support the forecasted customer load growth for the area. However, the need date has moved beyond SRP's ten-year planning window. The station site was established during a previous environmental study for the RS16 (Schrader)

transmission line siting process (Case No. 86). Initial service to the RS17 Receiving Station will utilize existing transmission lines constructed in 1998 for the Schrader Project.

### ***Dinosaur – RS21***

SRP has included a potential line from the existing Dinosaur (formerly known as RS19) Receiving Station extending to the east to a proposed RS21 Receiving Station to serve a portion of the Superstition Vistas area. This project would support the future load growth requirements in the East Valley/north Pinal County portion of SRP's service territory. The RS21 Receiving Station is projected to be interconnected with the Browning Substation and RS20 Receiving Station. While the anticipated need for this project is beyond SRP's ten-year planning window, SRP is including this project in the event the project schedule is accelerated.

## **Potential Future Projects**

A key element of SRP's transmission planning function is to utilize existing transmission corridors and open circuit positions on existing transmission structures, where feasible. The following projects have been included in this plan as informational items that may become firm plans, as system studies look farther into the future. These potential projects include:

- Rogers to Browning
- Silver King to Browning
- Superior 230kV Loop-in
- Thunderstone to Santan
- Pinnacle Peak to Brandow with a possible loop into Rogers or Thunderstone
- Rogers to Corbell
- Palo Verde - Saguaro

When system conditions are such that these facilities are needed, more definitive descriptions and schedules will be provided.

SRP continues to assess its transmission needs in the northern Pinal County and eastern Maricopa County to accommodate the anticipated growth in that area. In Figure 4 - Detail of SRP's 230kV East System, concepts of a plan to provide for the growth envisioned in the area are shown. These facilities are not described in detail in the narrative of this report but are included in the description sheets because while the need is apparent, the timeframe is beyond that of this plan.

**Eastern Mining Area (EMA) Transmission**

Additional transmission facilities will eventually be required in SRP's Eastern Mining Area (Figure 5 - SRP's Eastern Mining Area). If mining loads increase between Superior and Hayden, a 230kV line from Silver King to New Hayden may be required. Depending on where new load is added, this 230kV line may have an intermediate termination at Knoll Station. The line may be constructed in phases, with the Silver King to Knoll line being constructed first, followed by Knoll to New Hayden line, when required. The existing 115kV line from Kearny to Hayden will be looped into the New Hayden Station. The in-service dates for these lines are contingent upon customer need, but are currently projected beyond this ten-year plan.

SRP is currently working with a new customer that has requested service in the EMA. Study work has identified the need to upgrade a portion of the EMA system. When the final scope of work necessary to interconnect the new customer is determined, that scope will be provided to the ACC as an addendum filing to this Ten Year Plan if work progresses in the 2010 time frame.

Attached as Appendix 1 to this report is a summary of SRP study work that justifies the new projects identified in the Ten Year Plan. Study work for joint projects relies on subregional and previously submitted studies.

## **Project Maps**

The following pages have maps indicating where existing and future transmission projects meet. The maps provided show the 500kV system, an overview of the 230kV system and then a larger view of the 230kV system broken down into West and East views. The 115kV map is identified as 115kV, but due to future projects it also includes potential 230kV, and primarily covers the Eastern Mining Area of SRP's service territory.

The last map in the series is from SRP's Renewable Transmission Project submittal to the ACC on October 30, 2009. It highlights the projects that SRP and other Arizona utilities chose to meet the Commission's December 2008 Decision No. 70635 requirement to identify renewable transmission projects.

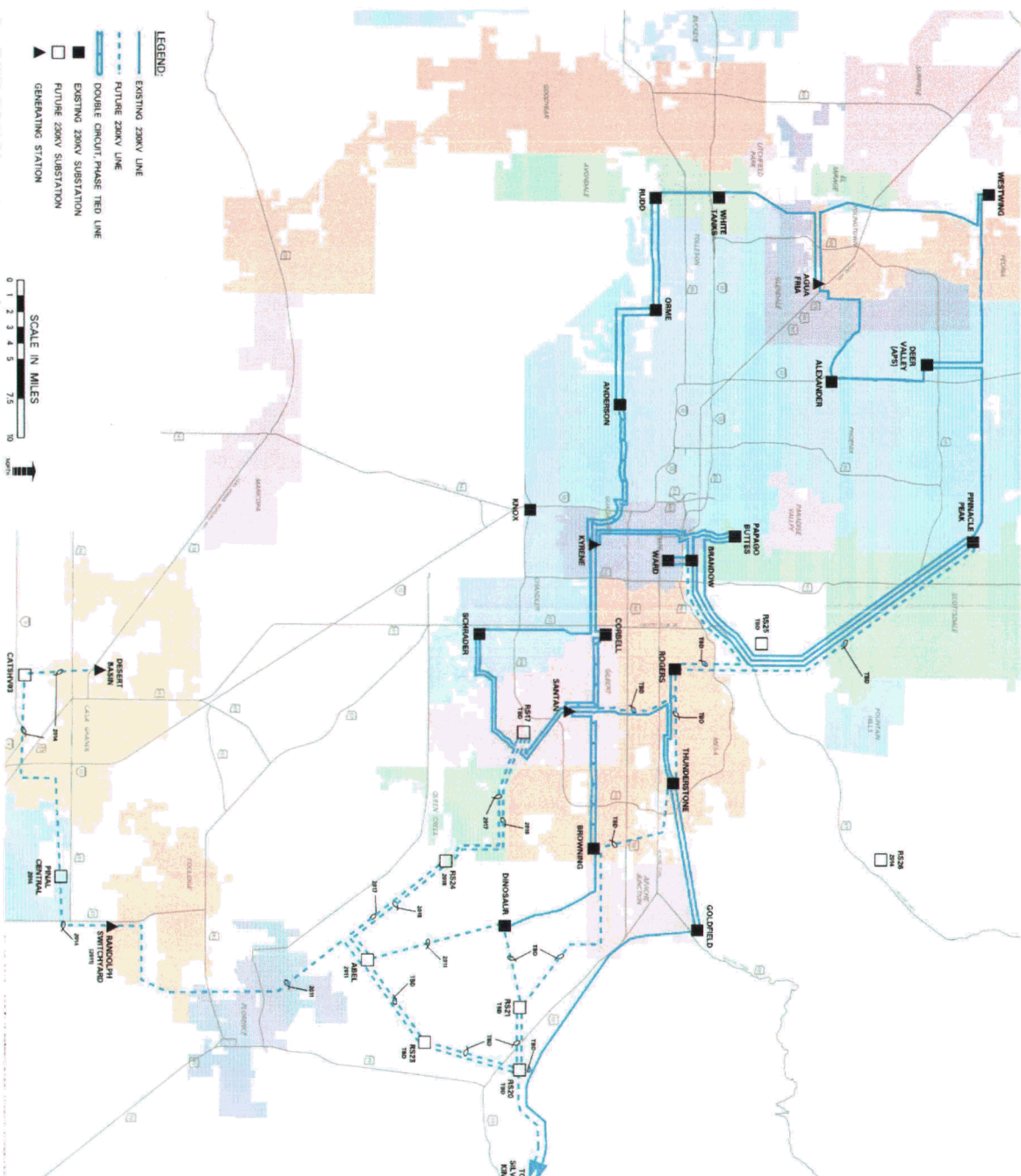
The maps included in this report are:

- Figure 1 - SRP 500kV system
- Figure 2 - SRP 230kV system overview
- Figure 3 - Detail of SRP's 230kV West System
- Figure 4 - Detail of SRP's 230kV East System
- Figure 5 - SRP's Eastern Mining Area
- Figure 6 - Arizona Utilities' Renewable Transmission Projects (November 2009)





## SRP's 230kV System Overview



## Figure 2 - SRP 230kV system overview



# SRP's 230kV West System

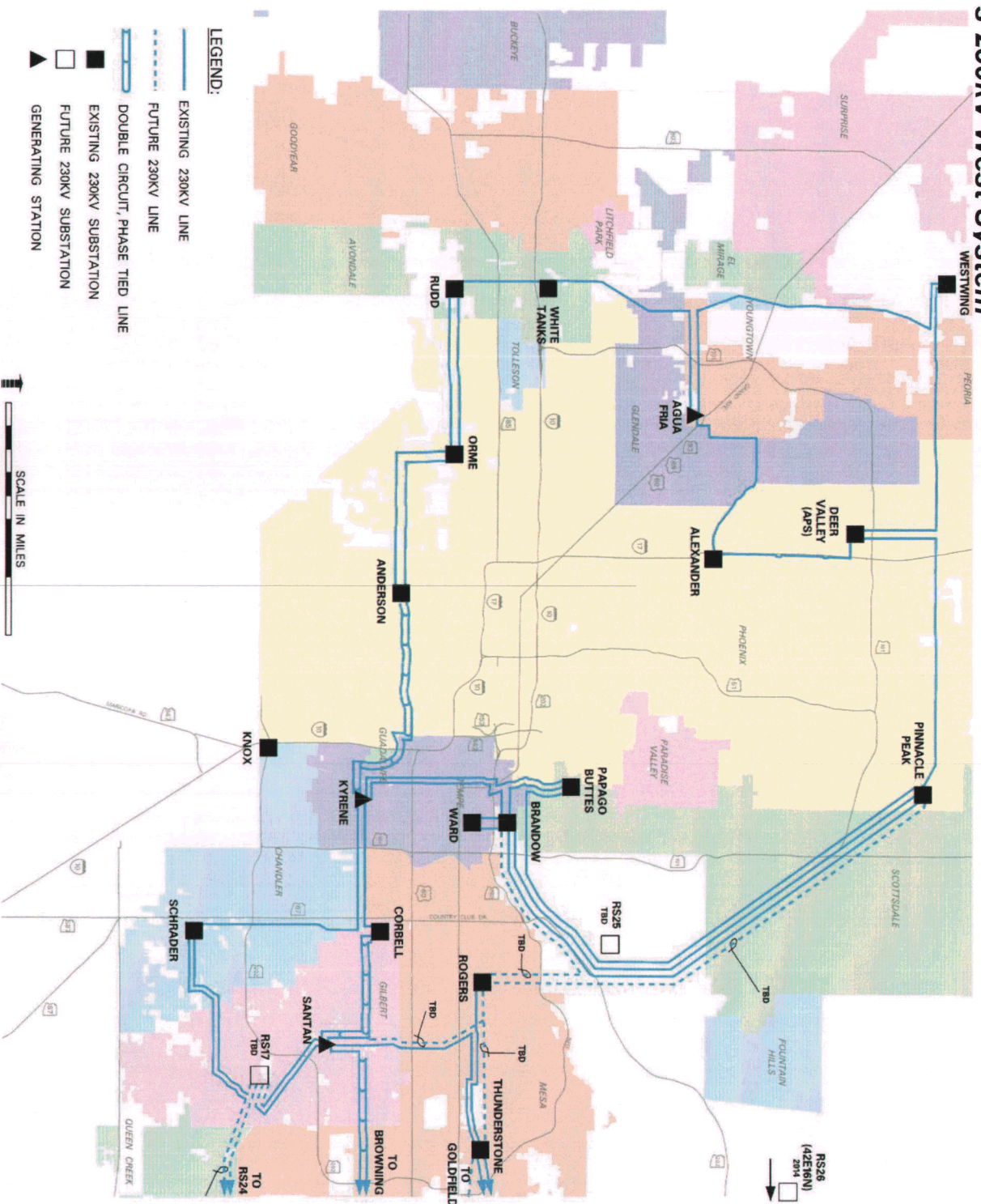


Figure 3 - Detail of SRP's 230kV West System

## SRP's 230kV East System

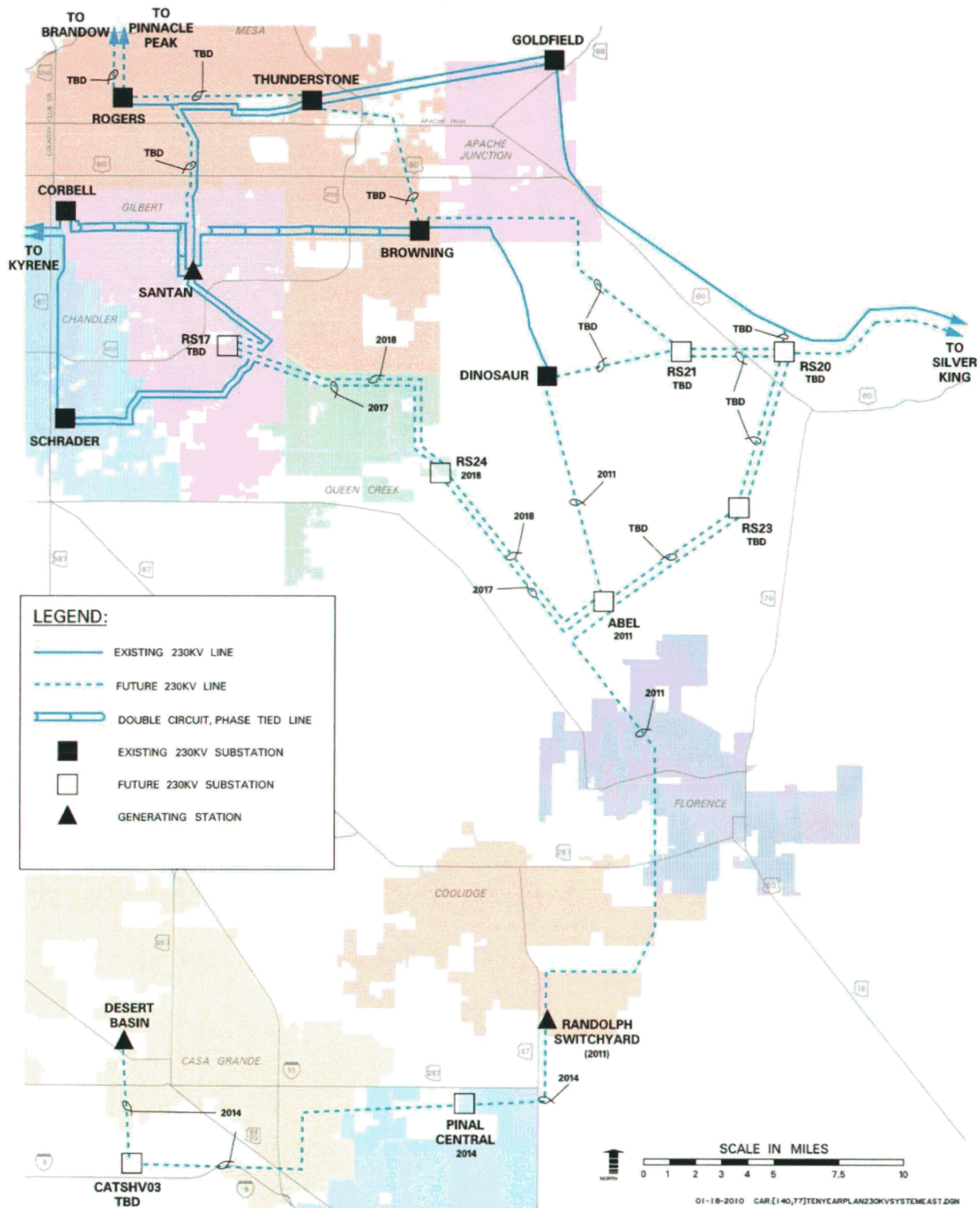


Figure 4 - Detail of SRP's 230kV East System



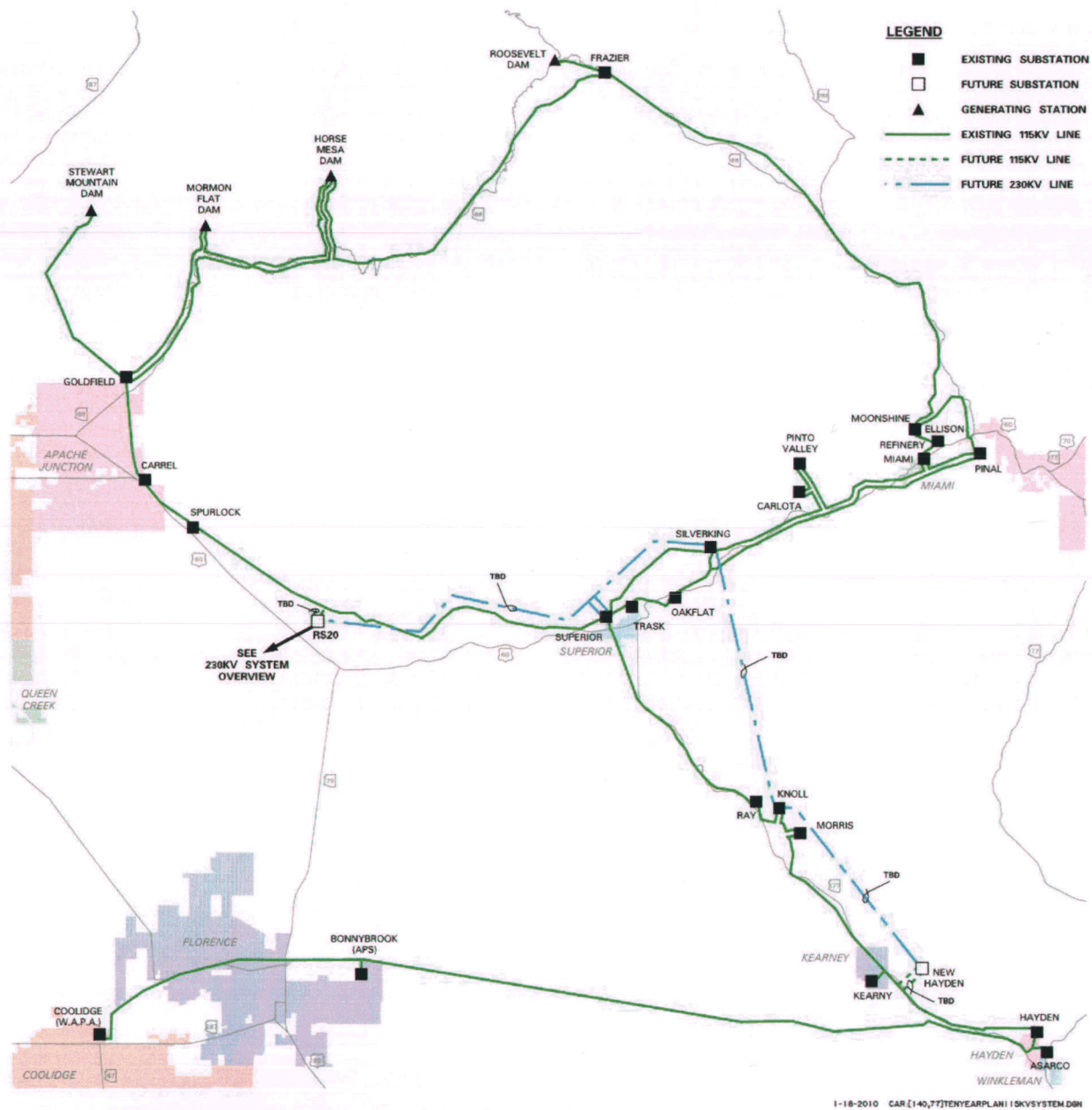
**SRP's 115kV System (Eastern Mining Area)**

Figure 5 - SRP's Eastern Mining Area

# *Renewable Transmission Projects*

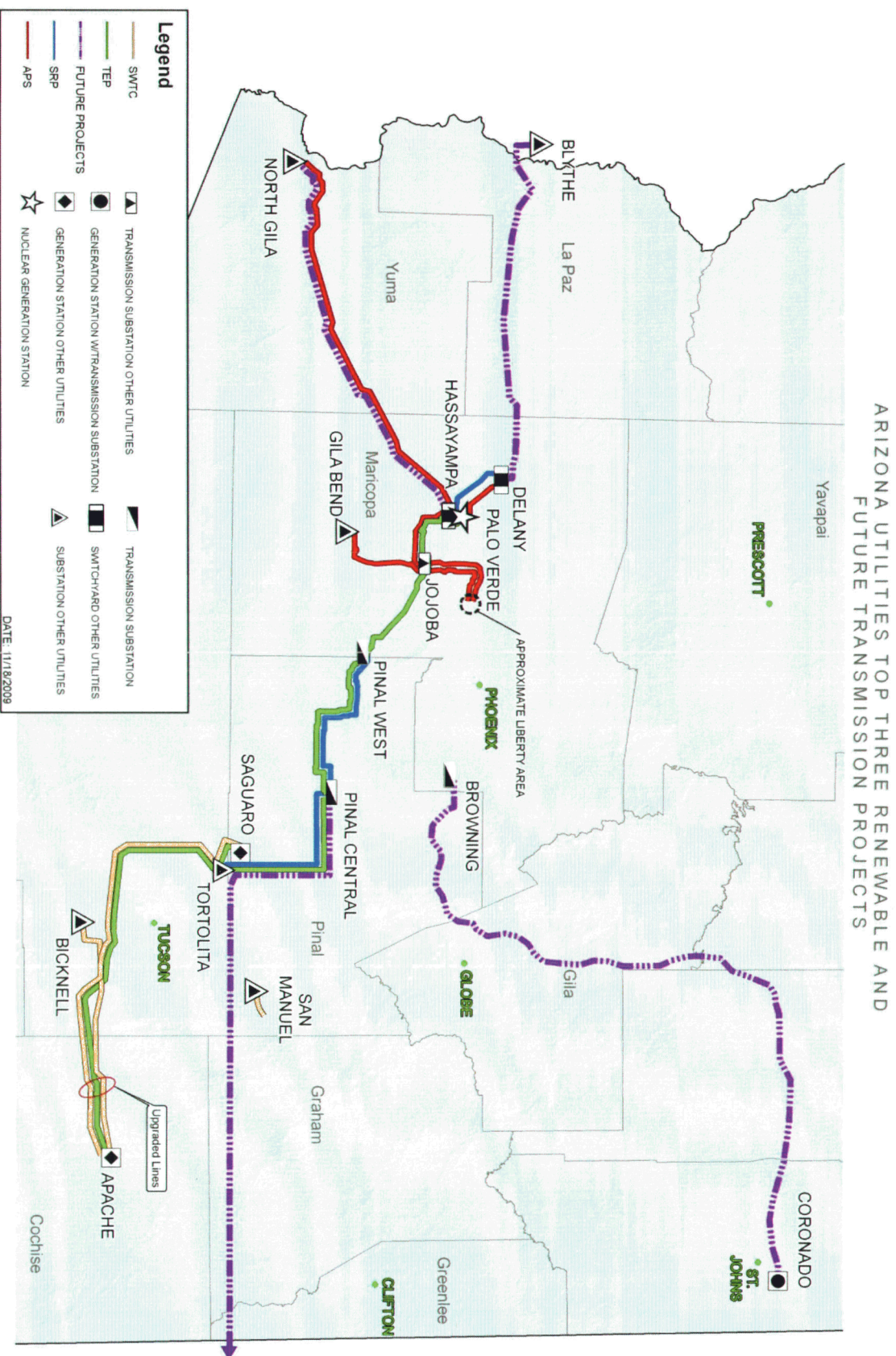


Figure 6 - Arizona Utilities' Renewable Transmission Projects (November 2009)

## **Project Descriptions**

The following pages detail the projects, meeting the requirements of A.R.S. Section 40-360.02. Each project is identified by name, in-service date, sizing details, routing, purpose, and major milestone dates.

**Morgan – Pinnacle Peak 500kV line (2010)****Size**

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Morgan (formerly TS9) 500kV Substation (adjacent to the Navajo-West Wing 500kV line and near the existing Raceway substation) SEC33, T6N, R1E
<i>Intermediate point</i>	none
<i>Point of Termination</i>	Pinnacle Peak 500kV Substation SEC 10, T4N, R4E
<i>Length</i>	Approximately 26 miles

**Routing**

South from the Morgan substation approximately 2 miles, generally paralleling the Navajo-West Wing 500kV lines, then turning east at approximately Dove Valley Road to approximately Interstate 17. At Interstate 17 the line heads south to Happy Valley Road where it turns east to the Pinnacle Peak substation, paralleling the existing 230kV transmission line corridor.

**Purpose**

This line is a result of joint planning through the SWAT forum. The project will increase the import capability of the system serving the Phoenix Metropolitan area and strengthen the transmission system on the east side of the Phoenix Metropolitan valley. The loop-in of the Navajo – West Wing 500kV line into Morgan will be part of the project.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	2007
<i>Construction Start</i>	2009
<i>Estimated In-Service</i>	2010

**Notes**

CEC for Case No. 131 was awarded in February 2007 (ACC Decision # 69343). SRP is a participant; APS is the lead and project manager.

***Pinal West – Pinal Central – Abel – Browning 500 & 230kV line (2011-2014)******Size***

<i>Voltage</i>	500 & 230kV
<i>Capacity</i>	1500 MVA
<i>Point of Origin</i>	Pinal West Substation SEC 18, T5S, R2E
<i>Intermediate point</i>	Santa Rosa Substation SEC 30, T5S, R4E
<i>Intermediate point</i>	Pinal Central Substation (formerly Pinal South) SEC 30, T6S, R8E
<i>Intermediate point</i>	Randolph Switchyard SEC 10, T6S, R8E
<i>Intermediate point</i>	Abel Substation (formerly Southeast Valley and RS22) SEC 19, T3S, R9E
<i>Intermediate point</i>	Dinosaur Substation SEC 10, T2S, R8E
<i>Point of Termination</i>	Browning Substation SEC 12, T1S, R7E
<i>Length</i>	Approximately 100 Miles

***Routing***

South and east from the Pinal West substation to approximately Teel Road, then east to the vicinity of the Santa Rosa substation. From Santa Rosa easterly to approximately the Santa Rosa Wash, then generally south to approximately a half mile north of I-8 where it turns east again. Then it runs easterly to about the location of the Pinal Central Substation (near the ED2 substation). From that point the line continues east to the Union Pacific Railroad, where it turns north. It generally runs north from this point to the Abel substation in the vicinity of the Magma Railroad and the CAP (approximate location of the Abel substation), then north along the CAP to the existing 500kV corridor between Elliot and Guadalupe Roads. At that point it turns west into the Browning substation.

**Purpose**

The Central Arizona Transmission System Study identified a number of system additions necessary to accommodate load growth and access to energy sources in the central Arizona area. This transmission line is the second segment of a series of transmission lines to serve the central Arizona region. This segment will initially provide an interconnection with the Palo Verde market area to market power to the Phoenix and central Arizona areas, and to accommodate the growth in development and population in Pinal County.

The Pinal West – Pinal Central 500kV portion of this project was identified as one of SRP's top 3 renewable transmission projects in November 2009.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	2005
<i>Construction Start</i>	2006
<i>Estimated In-Service</i>	2011 - Randolph – Abel - Dinosaur 230kV 2011 – Randolph – Browning 500kV energized at 230kV 2011 – Abel 230kV Substation 2014 – Pinal Central – Randolph 230kV 2014 – Pinal Central – Browning 500kV (the voltage and configuration change of the 2011 Randolph-Browning 230kV section). 2014 – Pinal West – Pinal Central 500kV 2014 – Pinal Central 500kV and 230kV Substation 2020 – Abel 500kV Substation TBD – Santa Rosa Substation
<i>Actual In-Service</i>	2007 – Dinosaur Substation 2007 – Dinosaur – Browning 230kV

**Notes**

The authorization for this line is provided for in the CEC for Case No. 126 (Pinal West to Browning), which was awarded in 2005 (ACC Decision # 68093 and # 68291). SRP was awarded ACC Decision # 70610 in 2008 allowing attachment of the 230kV line to the previously approved 500kV structures.

SRP is lead and project manager for the development of this project. Participants include SRP, Tucson Electric Power, Southwest Transmission Cooperative, and Electric Districts 2, 3, and 4 of Pinal County.



***Palo Verde – Delany – Sun Valley 500kV line (2012-2014)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Palo Verde Switchyard or a new switchyard at Arlington Valley Energy facility
<i>Intermediate point</i>	Proposed Delany Switching Station Approximately SEC 25, T2N, R8W
<i>Point of Termination</i>	Future Sun Valley 500/230kV Substation SEC 29, T4N, R4W
<i>Length</i>	Approximately 45 miles of single-circuit line

***Routing***

Generally west from Palo Verde/Hassayampa to the proposed Delany switching station and then north and east to the Sun Valley substation.

***Purpose***

This line will provide a 500kV interconnection to the APS transmission system and serve projected need for electric energy in the area immediately north and west of the Phoenix Metropolitan area. The project will increase the import capability into the valley and the export capability out of the Palo Verde/Hassayampa area.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	2005
<i>Construction Start</i>	2011
<i>Estimated In-Service</i>	2012 – Delany Switching Station 2012 – Palo Verde – Delany 2014 – Delany – Sun Valley

***Notes***

CEC issued to APS in August 2005 for Case No. 128 (ACC Decision # 68063). APS is the lead and project manager on the development of this project. SRP was a participant in the environmental siting work and anticipates being a participant in the development of the facilities.

This project was identified as one of SRP's top 3 renewable transmission projects in November 2009. It was previously identified as Palo Verde - Sun Valley with an intermediate point of Delany. The project title has been updated to clarify Palo Verde - Delany - Sun Valley in this 2010 plan.

***SunZia Southwest Transmission 500kV Project (2013-2014)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	3000MW
<i>Point of Origin</i>	Central New Mexico
<i>Intermediate point</i>	To be determined
<i>Point of Termination</i>	Pinal Central Substation SEC 30, T6S, R8E
<i>Length</i>	460+ miles

***Routing***

From Lincoln County area in central New Mexico to Pinal Central Substation in Coolidge, Arizona.

***Purpose***

Access renewable resources to comply with Renewable Portfolio requirements.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	2013/2014

***Notes***

Southwestern Power Group is the lead and project manager on the development of this project. SRP is a participant.

***Pinal Central – Tortolita 500kV line (2014)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Pinal Central Substation SEC 30, T6S, R8E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Tortolita Substation SEC 14, T10S, R10E
<i>Length</i>	To be determined through the siting process

***Routing***

Subject to completion of the siting process. Generally south from the Pinal Central substation to the Tortolita substation.

***Purpose***

Provide access to possible resources in Pima and Pinal Counties.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	2014

***Notes***

Tucson Electric Power is the lead for and project manager for this project. SRP is a participant in the siting of the transmission line and anticipates participating in the development of the project.

This project was identified as one of SRP's top 3 renewable transmission projects in November 2009.

***Palo Verde – North Gila #2 500kV line (2014)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Hassayampa Switchyard, Arlington Valley Power Plant or Redhawk Power Plant
<i>Intermediate point</i>	None
<i>Point of Termination</i>	North Gila 500/69kV Substation SEC 11, T8S, R22W
<i>Length</i>	Approximately 115 miles of single-circuit line

***Routing***

Generally follows the existing Hassayampa - North Gila 500kV #1 line.

***Purpose***

For SRP, this line will provide access to geothermal resources in the Imperial Valley area of California.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	2014

***Notes***

APS is the lead and project manager. SRP was a participant in the siting and permitting effort and anticipates being a participant in the project. CEC for Case No. 135 was awarded in January 2008.

**Desert Basin – Pinal Central 230kV (2014)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	600MW
<i>Point of Origin</i>	Desert Basin Power Plant Switchyard SEC 13, T6S, R5E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Pinal Central 230kV Substation SEC 30, T6S, R8E
<i>Length</i>	Approximately 21 miles

**Routing**

For approximately 6 miles from the Desert Basin Generating Station in Casa Grande near Burris and Kortsen Roads generally south and east to a point on the certificated SEV 500kV line near Cornman and Thornton Roads (vicinity of the proposed CATSHV03 Substation). Then the 230kV line will be attached to the 500kV structures for approximately 15 miles to the proposed Pinal Central Substation south of Coolidge, AZ.

**Purpose**

Remove the Remedial Action Scheme that was previously installed on Desert Basin Generating Station; improve reliability of the 230kV system in the region by reducing the loading on existing lines in the area; increase local area system capacity; reduce reliance on second party transmission system; create the first 230kV component of the CATS-HV proposed transmission system for the central Arizona area; and establish the Pinal Central Substation, identified as one of the future injection points of power and energy into the expanding central Pinal County load area, which will help local utilities serve local load.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	2010
<i>Construction Start</i>	2013
<i>Estimated In-Service</i>	2014

**Notes**

Authority for the portion of the 230kV line to be attached to the 500kV structures is provided for in the CEC granted in Case No. 126, awarded in 2005 (ACC Decision # 68093 and # 68291), and subsequently confirmed in Decision # 69183, which approved SRP's compliance filing for Condition 23 of the CEC.

SRP was granted a CEC for Case No. 132 in June of 2007 (ACC Decision # 69647) for the approximately six mile portion of the project not previously permitted from Desert Basin Generating Station to the vicinity of Cornman and Thornton Roads south of Casa Grande.

**RS26 Project (2014)****Size**

<i>Voltage</i>	115kV, 230kV, or 345kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	To be determined
<i>Intermediate point</i>	To be determined
<i>Point of Termination</i>	RS26 Substation (also known informally as Fountain Hills Station) Northeast Scottsdale/Fountain Hills area
<i>Length</i>	To be determined

**Routing**

The RS26 substation and transmission lines locations and route will be determined following a federal facilities siting/environmental/public process.

**Purpose**

Provide a source for the development occurring in and around the Fountain Hills area, as well as relieve the stress on the lower voltage system currently supplying the Fountain Hills/Rio Verde area.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	2014

**Notes**

SRP does not hold a CEC for this project, but will be seeking a Certificate subsequent to a federal environmental and public process to site the line.

The project need is estimated to be in the 2014 timeframe due primarily to the Ellman Company's development the Preserves at Goldfield Ranch northeast of Fountain Hills. The project must go through Federal NEPA process, so the schedule is in part driven by customer need and federal siting process.

***Sun Valley – Morgan 500kV line (2016)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Sun Valley (formerly TS5) 500/230kV Substation SEC 29, T4N, R4W
<i>Intermediate point</i>	none
<i>Point of Termination</i>	Morgan (formerly TS9) 500kV Substation SEC 33, T6N, R1E
<i>Length</i>	Approximately 40 miles

***Routing***

Generally the line will exit the Sun Valley substation and head north-northeast and then east to the Morgan substation.

***Purpose***

This line will be needed to serve projected electric energy load in the area immediately north and west of the Phoenix Metropolitan area, and will increase the import capability into the Valley.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	2013
<i>Estimated In-Service</i>	2016

***Notes***

APS is the lead and project manager. SRP was a participant in the siting and permitting effort and anticipates being a participant in the project. APS was awarded a CEC in Case No. 138 (Decision # 70850) in March 2009.

**Abel – RS24 – Moody (RS-17) 230kV (2017-2018)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875 MVA
<i>Point of Origin</i>	RS17 Substation (Adjacent to existing Moody 69kV Station) SEC 1, T2S, R6E
<i>Intermediate point</i>	Future RS24 SEC 25, T2S, R7E
<i>Point of Termination</i>	Abel Substation SEC 19, T3S, R9E
<i>Length</i>	Approximately 20 miles

**Routing**

Generally south and east from a point on the Santan to Schrader 230kV line near the future Moody (RS17) substation to the proposed RS24 substation in the south and east of the Queen Creek area, continuing south and east to the future Abel substation.

**Purpose**

To meet expected load growth in the eastern service territory.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	2010
<i>Construction Start</i>	2012
<i>Estimated In-Service</i>	2017 – 1 <sup>st</sup> Circuit 2018 – 2 <sup>nd</sup> Circuit 2018 – RS24 Substation

**Notes**

SRP received a CEC for this project on December 23, 2009, Case No. 148, Decision # 71441.



***Pinal Central – Abel – RS20 500kV line (2020)******Size***

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Pinal Central Substation SEC 30, T6S, R8E
<i>Intermediate point</i>	Abel Substation SEC 19, T3S, R9E
<i>Intermediate point</i>	Future RS23 Substation SEC 1 or 2, T3S, R9E
<i>Point of Termination</i>	Future RS20 Substation SEC 5 or 6, T2S, R10E
<i>Length</i>	Approximately 45 miles

***Routing***

Generally north from the Pinal Central substation to Abel, then north and east from Abel to a future RS20 substation as yet to be sited.

***Purpose***

This line is required for delivery of remote resources into the southeast portion of SRP's service territory.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	2020 - Pinal Central – Abel 2 <sup>nd</sup> circuit To be determined – Abel-RS20

***Notes***

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

**Hassayampa – Pinal West 500kV #2 (TBD)****Size**

<i>Voltage</i>	500kV
<i>Capacity</i>	1500MVA
<i>Point of Origin</i>	Hassayampa Switchyard SEC 15, T1S, R6W
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Pinal West Substation SEC 18, T5S, R2E
<i>Length</i>	Approximately 51 miles

**Routing**

South and east of the Hassayampa Switchyard along the existing Palo Verde -Kyrene 500kV line to a point where the gas pipeline splits from the transmission line, then generally along the pipeline (except in the Maricopa County Mobile Planning Area) to the new Pinal West Substation.

**Purpose**

The Central Arizona Transmission System Study identified a number of system additions necessary to accommodate load growth and access to energy sources in the central Arizona area. This project, comprised of two transmission lines, is one of the first segments of a series of transmission lines to serve the central Arizona region.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	2004
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	Ckt 1 – 2008 (in service) Ckt 2 – To be determined

**Notes**

CEC for Case No. 124 was awarded in May 2004 (ACC Decision # 67012). SRP is lead and project manager for development of this project. Participants include SRP, Tucson Electric Power, Southwest Transmission Cooperative, and Electric Districts 2, 3, and 4 of Pinal County. The first of the two permitted transmission lines was placed in service in October 2008.

**RS20 – Silver King – Coronado 500kV line (TBD)****Size**

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Future RS20 Substation SEC 5 or 6, T2S, R10E
<i>Intermediate point</i>	Silver King Substation Parts of SEC 15 & 16, T1S, R13E
<i>Point of Termination</i>	Coronado Generation Station SEC32, T14N, R29E
<i>Length</i>	Approximately 200 miles

**Routing**

Generally north and east from the future RS20 substation in the north Florence area to the existing Silver King substation, then northerly and easterly to the Coronado Generating Station switchyard, actual route to be determined.

**Purpose**

This line is required for delivery of remote resources into the southeast portion of SRP's service territory.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

SRP anticipates filing an application for a CEC once the scope and timing are further defined.

**Palo Verde – Saguaro 500kV line (TBD)****Size**

<i>Voltage</i>	500kV
<i>Capacity</i>	To be determined
<i>Point of Origin</i>	Palo Verde Generating Switchyard / Hassayampa Switchyard SEC 34, T1N, R6W
<i>Intermediate point</i>	Pinal West Substation SEC 18, T5S, R2E
<i>Point of Termination</i>	Saguaro Substation SEC 14, T10S, R10E
<i>Length</i>	Approximately 125 miles

**Routing**

Generally south and east from the Palo Verde area to a point near Gillespie Dam, then generally easterly until the point at which the Palo Verde – Kyrene 500kV line diverges to the north and east. The corridor then is generally south and east again adjacent to a gas line corridor until meeting up with the Tucson Electric Power Company's West Wing – South 345kV line. The corridor follows the 345kV line until a point due west of the Saguaro Generating Station. The corridor then follows a lower voltage line into the 500kV yard just south and east of the Saguaro generating station.

**Purpose**

This line is the result of the joint participation CATS study. The line will be needed to increase the adequacy of the existing EHV transmission system and permit increased power delivery throughout the state.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

A CEC was applied for and granted in March 1976 for this line (Case No. 24, ACC Decision # 46802). SRP is including this description sheet as a CATS participant with no defined in-service date.

**Moody (RS17) 230kV Loop-in (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	RS17 Substation (Adjacent to existing Moody 69kV Substation) SEC 1, T2S, R6E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	RS17 Substation SEC 1, T2S, R6E
<i>Length</i>	0

**Routing**

No new line construction. Loop-in 230kV lines that are adjacent to the site.

**Purpose**

Service to customer load in the Gilbert/Queen Creek area.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	None
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

Authority for this work is included in the RS16 Project CEC (Case No. 86, ACC Decision # 59791 and # 60099).

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

***Dinosaur - RS21 230kV line (TBD)******Size***

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Dinosaur Substation SEC 10, T2S, R8E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Future RS21, Florence Junction area To be determined (T1 or 2S, R10E)
<i>Length</i>	To be determined

***Routing***

Easterly from Dinosaur Substation (Queen Creek area) to the future RS21 Substation (Florence Junction area).

***Purpose***

To meet expected load growth in SRP's eastern service territory.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

***Notes***

SRP anticipates filing an application for a CEC once the scope and timing are further defined. This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

***Rogers - Browning 230kV line (TBD)******Size***

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Rogers Substation SEC 13, T1N, R5E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Browning Substation SEC 12, T1S, R7E
<i>Length</i>	Approximately 9 miles

***Routing***

To be determined through environmental and public processes, but generally east and south from Rogers, using existing right of way, where possible.

***Purpose***

Provide adequate transmission facilities to deliver reliable power and energy to SRP's customers in the eastern valley area.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

***Notes***

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

**Silver King – Browning 230kV line (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Silver King Substation Parts of SEC 15 & 16, T1S, R13E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Browning 500/230kV Substation SEC 12, T1S, R7E
<i>Length</i>	38 miles*

**Routing**

From Silver King in a westerly direction to Browning.

**Purpose**

To deliver Coronado or other power in eastern Arizona into SRP's distribution service territory.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

A CEC exists for the segment of this line from the Browning Substation to a point on the Silver King – Kyrene 500kV line corridor in Apache Junction (T1S, R8E, Section 11 & 12) (Case No. 20).

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

\*SRP proposes stringing 17 miles of conductor on existing lattice towers on Forest Service lands on structures built by Federal permit predating the AZ CEC process. The remaining 21 miles of the line will be new construction.



**Superior 230kV Loop-in (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Point on the Silver King to Browning 230kV line SEC 34, T1S, R12E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Superior Substation SEC 34, T1S, R12E
<i>Length</i>	Approximately ½ mile

**Routing**

Southeast from the proposed Silver King to Browning Line to the existing Superior Substation.

**Purpose**

To provide adequate transmission capacity to meet future load growth and/or to improve electric system reliability in SRP's eastern distribution service area.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

This project was called Silver King-Browning 230kV/ Superior Tie in the 2009 Ten Year plan. Name was changed to avoid confusion with the Silver King-Browning 230kV line project.

SRP does not hold a CEC for this project, but will be seeking a Certificate subsequent to an environmental and public process to site the line.

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

**Thunderstone – Santan 230kV line #2 (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875 MVA
<i>Point of Origin</i>	Thunderstone Substation SEC 18 T1N R7E
<i>Intermediate point</i>	none
<i>Point of Termination</i>	Santan Substation SEC 21 T1S R6E
<i>Length</i>	Approximately 13 miles

**Routing**

On existing structures with existing empty circuit position, or rebuilt to accommodate a second circuit position.

**Purpose**

To provide additional transfer capability from the south and east to the north and central areas of SRP's load service territory.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	None, already acquired
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

This circuit will be on existing structures, or structures rebuilt to accommodate double circuit lines. This project may require a CEC depending on final configuration.

***Pinnacle Peak – Brandow 230kV (TBD)******Size***

<i>Voltage</i>	230kV
<i>Capacity</i>	875 MVA
<i>Point of Origin</i>	Pinnacle Peak Substation SEC 10, T4N, R4E
<i>Intermediate point</i>	Possibly Rogers or Thunderstone Substation
<i>Point of Termination</i>	Brandow Substation SEC 11, T1N, R4E
<i>Length</i>	To be determined

***Routing***

Use of available circuit position on existing SRP Pinnacle Peak – Papago Buttes 230kV structures from Pinnacle Peak to Brandow. If connections to Rogers or Thunderstone are made, then the routing would generally be easterly from a point on the line to a termination at either Rogers or Thunderstone.

***Purpose***

Provide adequate transmission capacity to accommodate SRP customer load.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

***Notes***

A CEC was awarded for this circuit as a part of Case No. 69, Pinnacle Peak – Brandow/Papago Buttes 230kV line, dated January 1985.

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

**Rogers – Corbell 230kV line (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Rogers Substation SEC 13, T1N, R5E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	Corbell Substation SEC 10, T1S, R5E
<i>Length</i>	Approximately 12 miles

**Routing**

Use of available circuit position on existing 230kV structures in the area.

**Purpose**

Provide adequate transmission capacity to accommodate future load growth.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	Previously acquired
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	To be determined

**Notes**

SRP will be using an open position on existing double circuit structures for its entirety. The line and structures were constructed prior to the siting statutes.

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

**Silver King – Knoll – New Hayden 230kV (TBD)****Size**

<i>Voltage</i>	230kV
<i>Capacity</i>	875MVA
<i>Point of Origin</i>	Silver King Substation Parts of SEC 15 & 16, T1S, R13E
<i>Intermediate point</i>	Knoll Substation SEC 23, T3S, R13E
<i>Point of Termination</i>	New Hayden Substation SEC 7, T5S, R15E
<i>Length</i>	Approximately 35 miles

**Routing**

South from Silver King, looped into Knoll, continuing to the Hayden area.

**Purpose**

To increase the transmission capacity to serve a new mining load.

**Schedule**

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	Contingent upon customer need

**Notes**

SRP does not hold a CEC for this project, but will be seeking a Certificate subsequent to a federal environmental and public process to site the line.

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

***New Hayden 115kV Station Loop-in (TBD)******Size***

<i>Voltage</i>	115kV
<i>Capacity</i>	190MVA
<i>Point of Origin</i>	Point on Kearny - Hayden 115kV Line, SEC 7, T5S, R15E
<i>Intermediate point</i>	None
<i>Point of Termination</i>	New Hayden Substation SEC 7, T5S, R15E
<i>Length</i>	Approximately $\frac{3}{4}$ mile

***Routing***

Southwest from the existing Kearny - Hayden 115kV line to the New Hayden Transmission Station.

***Purpose***

To increase the transmission capacity to serve a new mining load.

***Schedule***

<i>Right of Way/ Property Acquisition</i>	To be determined
<i>Construction Start</i>	To be determined
<i>Estimated In-Service</i>	Contingent upon customer need

***Notes***

SRP does not hold a CEC for this project, but will be seeking a Certificate subsequent to a federal environmental and public process to site the line.

This information is included in this ten-year plan because the in-service date could advance into the ten-year reporting period.

## APPENDIX

Supporting documentation for the RS26 Project



**2010 CAPITAL PROJECT DESCRIPTION**  
*Fiscal Year 2012/2013*

*Project # FT-694*  
*Revision # 0, Page 1 of 1*  
*Last Edit: September 10, 2009*

**Job Title:** Pinkerton, Install a 24MVAR Capacitor Bank.

**Project Summary:** Install a 24MVAR capacitor, a 69kV breaker at Pinkerton Substation by 5/13

**In-Service Date:** April 30, 2013

**Coordinate Location:** 33 9/16E-24 15/16N

**Load Growth Project**

**Contact(s):** TSP: Jeni Mistry

**Approved By:** Not yet approved (See Project Funding Priority List for Funding Status)

**Area Maps:** Fountain  
**Dist. Station Diagrams:** Pinkerton

**Description of Work:**

Pinkerton Capacitor Bank

FY 12/13 CBI 360-3042 \$500,000

- Install 1 - 69kV Capacitor Bank (Generic) (24MVAR) and a 69kV breaker
- Design Provide control for automatic switching to insert the bank when the voltage falls below 1.00pu and to remove the bank when the voltage exceeds 1.05pu

FY 2012/2013 \$500,000

ESTIMATED TOTAL \$500,000

**Justification:**

- During Wheeler/McMullin line outage, the bus voltage at Wheeler drops below its acceptable level (0.921).

**2009 Project Summary:** Install a 24MVAR capacitor, a 69kV breaker at Pinkerton Substation by 5/13

**NOTE:**

- 1) For 2013 it was noted that only 12MVAR is needed but in 2015 it needs a 24MVAR Capacitor
- 2) Operating the Papago Buttes 69kV bus at 73kV(1.057p.u) and Brandow 69kV bus at 72.6kV (1.052 p.u) will delay the need of the capacitor bank till 2016. But this will cause high voltage in Papago Buttes and Brandow planning area.

Project # FT-30  
Revision #2; Page 1 of 2

**2009 CAPITAL PROJECT DESCRIPTION****Budget Year 2014/2015**

EHV Diagrams 115, 230 & 500kV  
Area Switching Diagrams fountain2.pdf  
Rec. Station Diagrams  
Dist. Station Diagrams

**Date:** January 23, 2009**Location:** Fountain/Rio Verde Area**Job Title:** RS-26, New Receiving Station in the Fountain/Rio Verde area**Project Summary:** Construct a new Fountain Area Receiving Station, RS-26, with 1-280MVA 345/69kV (or 230/69kV) transformer and connect it to 33E-25N 69kV substation by 5/2014.**Description of Work:****FOUNTAIN HILLS 345/230kV RECEIVING STATION WORK**

- Build two 345kV(230kV) buses with 6" EHPS AL tubing, bays 1-3.
- Install 3-345kV(230kV) 3000A breakers & 7-345kV(230kV) 3000A disconnects.
- Install 1-280MVA 345/69kV(230/69kV) transformer in the bay 2.

**345kV(230kV) RECEIVING STATION SUBTOTAL \$8,000,000****FOUNTAIN HILLS 69 KV RECEIVING STATION WORK**

- Build two 69kV buses with 6" EHPS AL tubing, bays 1-3.
- Install 2-69kV 3000A, 44kA I.C. breakers & 4-69kV 3000A disconnects.
- Terminate 69kV line from 33E-25N into bay 2.

**69KV RECEIVING STATION SUBTOTAL \$670,000****33E-25N 69kV SUBSTATION WORK**

- Install 1-69kV 2000A, 40kA I.C. breaker & 2-69kV 2000A disconnects.

**33E-25N STATION SUBTOTAL \$245,000****69KV LINE WORK**

- Build 1-954ACSS 69kV line from the new receiving station to 33E-25N substation.
- The furthest location of the Receiving Station from 33E-25N is 8 miles.

**69KV LINE MAX. SUBTOTAL \$2,000,000****ESTIMATED TOTAL \$8,915,000****In-Service Date:** April 30, 2014

Rob Kondziolka 1/28/2009

ManagerDate

Load Growth Project, TSP Contact Jeff Loehr

**Justification:**

- During summer peak loading with all projects in, the voltage in the Fountain area falls below the minimum acceptable level at several 69kV stations for an Evergreen/Pima outage. A new receiving station and associated 69kV line work in the area will provide more long-term voltage support than the addition of capacitor banks.



Project # FT-30  
Revision #2; Page 2 of 2

## 2009 CAPITAL PROJECT DESCRIPTION

**SRP**  
Budget Year 2014/2015

Date: January 23, 2009

Location: Fountain/Rio Verde Area

Job Title: New Receiving Station in the Fountain/Rio Verde area

Project Summary: Construct a new Fountain Area Receiving Station with 1-280MVA 345/69kV (or 230/69kV) transformer and connect it to 33E-25N 69kV substation by 5/2014.

	Voltage @ Evergreen & Wheeler for outage of Evergreen-Pima 69kV line			
	without the Fountain Hills Rec. station		with the Fountain Hills Rec. station	
Year	2014	2015	2014	2015
Evergreen	0.949pu case	diverges	0.993pu	0.988pu
Wheeler	0.950pu case	diverges	0.992pu	0.987pu

**NOTE:** The Fountain area has 25MVAR of caps added at 33E-25N in 2010.

**2003, 2004 Project Summary:** The project was removed from the six-year planning period with the addition of FT#3 switching station and 25MVAR cap bank at 33E-25N.

**2002 Project Summary:** Construct a new Fountain Area Receiving Station or a new 69kV line of unknown mileage and origin in the Fountain area by 05/08

**2001 Project Summary:** Construct a new Fountain Area Receiving Station or a new 69kV line of unknown mileage and origin in the Fountain area by 05/07.